

Amendments to the Drawings:

The attached sheet of drawings includes new Figure 5. This sheet, which includes Figures 3-5, replaces the original sheet including Figures 3 and 4. In Figure 5, previously omitted elements 504, 506, 512, and 514 have been added.

Attachment: Replacement Sheet

REMARKS

The present Amendment is in response to the Examiner's Office Action mailed December 17, 2004. Paragraph 35 has been amended. Claims 1, 9 are amended, and new claim 23 is added. Claims 1-23 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. Amended Drawings and Specification

The Examiner objects to the figures on the grounds that they do not show every feature of the invention specified in the claims. Initially, the Examiner states that the first and second duplex connectors of claim 8 are not depicted in the figures. In response, Applicants submit new Figure 5 which includes reference numerals 504 and 512 to represent transceiver duplex connectors and reference numerals 506 and 514 to represent cable duplex connectors. Support for new Figure 5 can be found in Figure 3 and in paragraphs 33 and 35 of the application as filed. Additionally, paragraph 35 has been amended to add a recitation of reference numerals 504 and 512 to represent transceiver duplex connectors and reference numerals 506 and 514 to represent cable duplex connectors

The Examiner also objects to the figures on the grounds that the figures do not show the second optical module of claim 15. As described at paragraph 31 of the specification and illustrated in Figure 3, the illustrated BiDi link system includes: "first bi-directional communications module 302 and second bi-directional communications module 304 connected

by first cable 306 and second cable 308." Applicants therefore believe that the second optical module of claim 15 is shown at second bi-directional communications module 304 in Figure 3. Withdrawal of this ground of rejection is respectfully requested.

Finally, the Examiner also objects to the figures on the grounds that the figures do not show the plurality of elements of claim 18. As previously noted, Applicants submit new Figure 5 which includes reference numerals 504 and 512 to represent transceiver duplex connectors and reference numerals 506 and 514 to represent cable duplex connectors. Support for new Figure 5 can be found in Figure 3 and in paragraphs 33 and 35 of the application. As such, Figures 5 now contains reference numerals corresponding to each of the elements in claim 18 (first and second optical cables 306, 308, connectors 506, 514, first bi-directional module 302, second bi-directional module 304, connectors 504, 512, transmitters 314, 318, and receivers 316, 320. Withdrawal of this ground of rejection is respectfully requested.

II. PRIOR ART REJECTIONS

A. Rejection Under 35 U.S.C. §102(b)

The Examiner rejects claims 1-3, 5, 7-10 and 12 under 35 U.S.C. § 102(b) as being anticipated by *Bhagavatula* (United States Patent No. 4,889,404). Because *Bhagavatula* does not teach or suggest each and every element of the rejected claims, Applicants respectfully traverse this rejection in view of the following remarks.

Bhagavatula teaches systems for bidirectional communication between a central station and a plurality of user stations. Col. 5, ll. 23-26. More particularly, *Bhagavatula* teaches that each connection between the central station and each of the distinct user stations is over a single optical fiber. Col. 5, ll. 23-38; Fig. 1. The central station is defined by *Bhagavatula* as: "The central station could be a telephone local exchange office or remote terminal, a cable television head end or a remote distribution station, a computer or a cluster of computers with associated controllers, a weapons control center or any other network or system site originating information for the system." Notably, *Bhagavatula* does not reference that the central station can itself be a single communications module in any form that is comparable to the teachings of the present invention. *Bhagavatula teaches* in essence what is a central station that includes a plurality of

bi-directional modules. For an understanding of a module as the term is used in the present application, Applicant directs the Examiner, for example, to modules 302, 304, and 400 in Figures 3-5.

In direct contrast, the invention as presently claimed relates to a bidirectional communications module that communicates over dual cables. Applicants respectfully submit that there is a significant difference between *Bhagavatula*'s central location that can have any number of transceiver/receiver paired bi-directional modules, each of which communicates over a single fiber with a remote location, and a single module that is configured to communicate bidirectionally over dual cables.

Accordingly, present claim 1 specifically recites, *inter alia*: "wherein the first transmitter, the second transmitter, the first receiver, and the second receiver comprise a bi-directional communications module." As above noted, *Bhagavatula* does not teach such a communications module operable to communicate bi-directionally over two fibers.

Similarly, present claim 9 recites, *inter alia*: "a duplex connector configured for receiving a duplex optical cable having a first optical fiber and a second optical fiber." *Bhagavatula* has no teaching of a duplex connector capable of communicating with a first optical fiber and a second optical fiber. Further, *Bhagavatula* would have no motivation to combine such a structure with its various bidirectional elements because *Bhagavatula* does not teach or suggest any utility for running a duplex optical cable out of its central location.

Claims 2, 3, 5, 7, 8, 10, and 12 depend from claim 1 or claim 9 and include the limitations therein. Accordingly, claims 2, 3, 5, 7, 8, 10, and 12 are not anticipated by *Bhagavatula* for at least the same reasons as claims 1 and 9.

Since *Bhagavatula* does not teach the device being claimed in this application, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be withdrawn.

B. Rejection Under 35 U.S.C. § 103

The Examiner rejects claims 4, 6, 11 and 13-22 under 35 U.S.C. § 103 as being unpatentable over *Bhagavatula* (United States Patent No. 4,889,404). Applicant respectfully traverses.

Claims 4, 6, and 11 depend from claim 1 or claim 9 and include the limitations therein. Accordingly, claims 4, 6, and 11 are patentable over *Bhagavatula* for at least the same reasons as claims 1 and 9.

Regarding the rejection of claim 13, Applicants traverse the Examiner's rejection for obviousness on the grounds that *Bhagavatula* fails to teach or suggest each and every element of the rejected claims. As previously noted, *Bhagavatula* teaches a central station that is not the same of the modules described and claimed in the present application. Rather, *Bhagavatula* teaches in essence what is a central station that includes a plurality of bi-directional modules. Each bi-directional module at the central station is in communication over a single fiber with one of a plurality of user stations. See Figure 1.

In direct contrast, present claim 13 recites, *inter alia*: "a first bi-directional communications module, comprising a first bi-directional transceiver . . . and a second bi-directional transceiver" and "a second bi-directional communications module, comprising a third bi-directional transceiver . . . and a fourth bi-directional transceiver."

The Applicant therefore respectfully asserts that the Office Action fails to set forth a *prima facie* case for obviousness in that, on pages 5 and 6 of the Office Action, the Examiner references laser 15-1 and light source 20-1 (at opposite ends of an optical fiber) as being part of a first bi-directional communications module and laser 15-2 and light source 20-2 (again, at opposite ends of an optical fiber) as being part of a second bi-directional communications module. As a result, the structures cited in the Office Action do not correlate to those in claim 13 and cannot create a *prima facie* case for obviousness.

With reference to claims 15 and 18, *Bhagavatula* fails to teach or suggest methods using first and second optical modules as presently claimed. By way of example of the various distinctions between claims 15 and 18 and *Bhagavatula*, *Bhagavatula* does not teach the use of first and second optical fibers to interconnect a first optical module (or bi-directional communications module) with a second optical module (or bi-directional communications module). Rather, *Bhagavatula* uses single optical fibers (e.g. fiber 14-1) to interconnect optical modules.

Claims 14, 16, 17, and 19-22 depend from claim 13, 15, or 18 and include the limitations therein. Accordingly, claims 14, 16, 17, and 19-22 are patentable over *Bhagavatula* for at least the same reasons as claims 13, 15, or 18.

Accordingly, Applicants submit that the Examiner has failed to set forth a *prima facie* case for obviousness and respectfully request that the rejection be withdrawn.

C. New Claim 23

New claim 23 has been added to recite an additional combination of features that is not taught or suggested by the cited prior art. Accordingly, the prompt allowance of claim 23 is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 18th day of April, 2005.

Respectfully submitted,



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